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UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART XI.¹

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The preceding part under this general title appeared in December 1961 (Bul. Brooklyn Ent. Soc. 56: 121-127). In the present paper I am describing species of Tipulidae from various insular sources, as follows:

Saint Helena, in the Atlantic ocean, 1100 miles from the African coast, collected by Arthur Loveridge; kindly presented to me by Dr. Phillip J. Darlington, Jr.; 15° 57' S. Lat.; 5° 42' W. Long.

Isla San Ambrosio, in the Pacific ocean, north of Juan Fernandez, collected by Padre Guillermo Kuschel; 26° 40' S. Lat.; 80° W. Long.

Isla Navarino (Navarin Island), in Beagle Canal, Tierra del Fuego, Chile, collected by Padre Kuschel; 55° 10' S. Lat.; 67° 40' W. Long.

I am greatly indebted to the persons cited for the privilege of studying these particularly interesting crane-flies.

TIPULIDAE

Tipula (Eumicrotipula) navarinoensis, n. sp.

Belongs to the *glaphyoptera* group; (wing of female to 10 mm.); general coloration gray, praescutum with three darker gray stripes; femora darkened at tips, broadly so on fore legs; wings yellowed, clearest on disk, extensively clouded with pale brown, including four subcostal darkenings; wing veins stout, chiefly glabrous, *m-cu* long, oblique; abdomen dark brown, lateral tergal borders broadly light gray; ovipositor with bases of hypovalvae large, scooplike.

Female: Length about 11-12 mm.; wing 9-10 mm.; antenna about 2.8-2.9 mm.

¹ Contribution from the Entomological Laboratory, University of Massachusetts.

Frontal prolongation of head stout, brownish gray, without nasus; palpi black. Antennae 12-segmented; brownish black, in the paratypes with pedicel vaguely more yellowed; flagellar segments with basal enlargements scarcely developed; verticils shorter than the segments; terminal segment subequal in length to the penultimate. Head dark brown, the front and broad orbits light gray; vertical tubercle not developed; anterior vertex broad, subequal in diameter to the exposed part of eye.

Pronotum gray, broadly dark brown on sides. Mesonotal praescutum gray, with three darker gray stripes, the interspaces vaguely more darkened; posterior sclerites of notum gray, each scutal lobe with two separated brown areas; scutellum and mediotergite with a narrow brown central line; mesonotum unusually glabrous, with sparse pale setae on scutellum and mediotergite. Pleura and pleurotergite light gray, ventral sternopleurite darker, dorsopleural membrane yellowed. Halteres brownish yellow, knob infuscated. Legs with coxae light gray; trochanters obscure yellow; fore femora chiefly brownish black, yellowed basally, remaining femora brownish yellow, the tips narrowly darkened; tibiae and tarsi brownish yellow, outer tarsal segments darkened; claws very small, simple. Wings with the ground yellowed, extensively clouded with pale brown, especially in outer radial field, along vein *Cu* in cell *M*, and near outer ends of Anal cells; region of cell *Sc* with four darkenings that are subequal to or more extensive than the yellowed interspaces; center of wing disk more whitened; stigma variegated, the base yellowed, outer end infuscated; veins brown, subcostal interspaces yellow. Costal fringe short and dense; veins stout, chiefly glabrous, with trichia on veins *R*, *R*₁, *R*₃, outer half of *R*₄₊₅ and outer end of *M*₁; a series of trichia on distal section of *Cu*₁. Venation: *Rs* long, straight, slightly less than twice the long oblique *m-cu*, the latter at fork of *M*₃₊₄ or on base of *M*₄; length of petiole of cell *M*₁ variable, in cases much longer than *m*.

Abdomen dark brown, lateral tergal borders broadly light gray. Ovipositor with cerci relatively short and straight; hypovalvae with basal shield very large, scooplike, the outer valves flattened.

Habitat: Chile (Tierra del Fuego).

Holytype: ♀, P. Williams, Isla Navarino, Beagle Canal, 600 meters, 7 Jan. 1959 (Guillermo Kuschel). *Paratopotypes*: 3 ♀♀ with the type.

The previous discussion of Fuegian Tipulidae² provides a key to the species by which the present fly runs to *Tipula* (*Eumicrotipula*)

² Alexander C. P. Arkiv för Zoologi, 13, no. 6: 1-32, 20 figs.; 1920.

magellanica Alexander, a quite distinct fly. The still poorly understood *T. (E.) pictipennis* Walker and *T. (E.) varineura* (Bigot) are much larger flies with the antennal pedicel conspicuously yellowed. As I have indicated previously it seems possible that both of these names apply to a single species, the former having priority. The present fly appears to have the wings slightly reduced and it may be that the males will be found to have proportionately larger wings.

***Limonia (Dicranomyia) sanctae-helenae*, n. sp.**

Size large (wing about 9 mm.); general coloration of mesonotum gray, praescutum with four brown stripes, pleura restrictedly lined with dark brown; halteres yellow, base of stem narrowly infuscated; femora obscure yellow, with a brown nearly terminal ring; wings marmorate, pale brown, variegated by yellowed areas along the veins and patterned with dark brown spots, the veins alternately yellow and dark brown, cell *1st A* with two dark brown spots; male hypopygium with the ventral dististyle small, rostral spines elongate; mesal-apical lobe of gonapophysis slender, nearly straight.

Male: Length about 7-7.5 mm.; wing 8.5-9 mm.

Female: Length about 7-8 mm.; wing 9-9.5 mm.

Rostrum relatively long, black; palpi black. Antennae with basal two segments black; remainder of organ broken. Head gray; anterior vertex subequal to or a little broader than the diameter of the scape.

Pronotal scutum dark brown, scutellum more yellowed, especially laterally. Mesonotum gray, praescutum with four pale brown stripes, the intermediate pair nearly confluent, darker anteriorly; scutal lobes brownish gray, centers darker; scutellum and postnotum gray. Pleura yellowish gray, narrowly lined with dark brown, including a longer dorsal line extending from propleura to base of halteres, the ventral stripe including most of fore coxa and an area on sternopleurite. Halteres yellowed, base of knob narrowly patterned with brown. Legs with coxae extensively darkened, tips pale; trochanters pale yellow; femora obscure yellow with a virtually terminal brown ring; tibiae and proximal two tarsal segments yellow, outer segments brownish black; claws relatively small, outer spine largest, nearly one-half as long as the apex of claw, with about six progressively smaller more basal denticles. Wings marmorate, ground pale brown, variegated by cream yellow areas along each vein; a conspicuous darker brown pattern, as follows: arculus, mid-length of cell *Sc*, fork of *Sc* and origin of *Rs*, at midlength of vein *R*₁, *R*₂ and *R*₁₊₂; cord and outer end of cell *1st M*₂ darkened; a

series of marginal spots at ends of all longitudinal veins; a second brown spot in cell *1st A* at near midlength of vein *2nd A*; veins light yellow, conspicuously dark brown in the spotted parts, producing a checkered appearance. Macrotrichia on veins beyond the general level of origin of *Rs*, lacking on *Sc*, *M* and virtually all of *Cu₁*, present at tips of both Anal veins. Venation: *Sc₁*, ending opposite origin of *Rs*, *Sc₂* near tip of *Sc₁*; *R₁₊₂* about one-half longer than *R₂*; *Rs* straight, about twice the basal section of *R₄₊₅*; cell *1st M₂* long and narrow, subequal to outer section of *M₁₊₂*; *m-cu* usually close to fork of *M*, in cases up to one-half its length before this fork.

Abdomen dark brown, genitalia of both sexes obscure fulvous. Male hypopygium with posterior border of tergite narrowly emarginate, producing two broadly rounded lobes, their borders broadly thickened, provided with unusually long setae. Basistyle with ventromesal lobe relatively slender. Dorsal dististyle a stout gently curved rod, the tip acute; ventral style small, its area less than one-half that of the basistyle, body small, prolongation slender, spines two, unusually long, placed at base of prolongation, directed outwardly. Gonapophysis with mesal-apical lobe very slender, nearly straight, lower margin microscopically crenulate.

Habitat: Saint Helena.

Holotype: ♂, Varney's, at light, 17 June 1961 (Arthur Loveridge).

Allotopotype: ♀, with the type. *Paratopotypes*: ♂♂♀♀, with the types.

Limonia (Dicranomyia) sanctae-helenae is quite distinct from all other regional species, superficially being most similar to flies such as *L. (D.) tipulipes* (Karsch) or *L. (Idioglochina) marmorata* (Osten Sacken). In the nature of the wing pattern, especially the paired darkened spots along vein *2nd A*, the species agrees closely with members of the *punctulata* group, widely distributed in the Old World Tropics, and including chiefly species of small size. The most similar member of this group is *L. (D.) guamicola* Alexander, of Micronesia, entirely different in the structure of the male hypopygium and other features.

***Limonia (Dicranomyia) loveridgeana*, n. sp.**

Size large (wing 8 to 9 mm); general coloration brown; rostrum, palpi and legs uniformly black; wings strongly darkened, stigma slightly deeper in color, *Sc₁* ending about opposite origin of *Rs*, *Sc₂* near its tip; male hypopygium with the ventral dististyle large and fleshy, its area exceeding four times that of the basi-

style; rostral spines two or three in number; mesal-apical lobe of gonapophysis long and slender.

Male: Length about 6–7.5 mm.; wing 8–9 mm.

Female: Length about 7 mm.; wing 8.5 mm.

Rostrum and palpi black. Antennae with scape and pedicel black; flagellum broken. Head dark brownish gray; anterior vertex narrow, about two-thirds the diameter of scape.

Pronotum dark brown. Mesonotal praescutum dark brown medially, the sides and scutal lobes in cases more yellowed; scutellum brownish gray, postnotum more yellowed, especially the pleurotergite. Pleura dark brown dorsally, including the dorso-pleural region and anepisternum, the sternopleurite, pteropleurite and metapleura more yellowed. Halteres dusky, knobs dark brown. Legs with the fore coxae dark brown, remaining coxae and all trochanters obscure yellow; remainder of legs black; claws relatively long, with four spines, the outer one longest, the more basal ones progressively smaller. Wings strongly and uniformly darkened, unpatterned except for the oval slightly darker stigma; veins brown. Longitudinal veins beyond general level of origin of *Rs* with macrotrichia, lacking on *Sc* and *1st A*, present on outer ends of *M* and *2nd A*. Venation: *Sc* short, *Sc*₁ ending about opposite origin of *Rs*, *Sc*₂ near its tip; *Rs* nearly straight, more than twice the basal section of *R*₄₊₅; cell *1st M*₂ variable in length, in cases about as long as the distal section of vein *M*₃, in other instances shorter; *m-cu* close to fork of *M*; cell *2nd A* very broad on basal half.

Abdomen brown, sternites somewhat more yellowed. Male hypopygium with the tergite transverse, posterior border very gently emarginate, lobes very low, with abundant long setae. Basistyle relatively small; ventromesal lobe large, with a smaller more darkened lobule in its outer angle. Dorsal dististyle a gently curved rod, the tip acute. Ventral dististyle very large and fleshy, its area more than four times that of the basistyle; rostral prolongation relatively slender; rostral spines slightly variable in length, placed on side of prolongation at near midlength; usually two in number, in cases with three such spines, all slightly separated. Gonapophyses with mesal-apical lobe long and slender, the small apex narrowly blackened.

Habitat: Saint Helena.

Holotype: ♂, Varney's, at light, 17 June 1961 (Arthur Loveridge). *Allotopotype*: ♀, pinned with type. *Paratopotypes*: 6 ♂♀, associated at light with *Limonia (Dicranomyia) sanctae-helenae*, n. sp.

I take pleasure in naming this interesting fly for Dr. Arthur Loveridge, to whom I am indebted for several interesting African Tipulidae in past years. The fly is quite distinct from other species previously described from the Ethiopian region, being likewise different from the rather numerous members of the subgenus known from the Canary Islands.³ Superficially the species strongly suggests *Limonia* (*Dicranomyia*) *stygiopennis* (Alexander) of Hawaii which actually is a very different fly.

***Limonia* (*Idioglochina*) *ambrosiana*, n. sp.**

Size medium (wing of male to 7 mm.); general coloration of thorax brownish black; rostrum and antennae black, flagellar segments short-oval, verticils reduced; knobs of halteres yellowed; legs brownish black; wings strongly darkened, restrictedly patterned, Sc_2 far retracted; male hypopygium with posterior border of tergite very shallowly emarginate; rostral spines two; mesal-apical lobe of gonapophysis unusually long and slender, nearly straight, tip obtuse.

Male: Length about 5–5.5 mm.; wing 6.5–7 mm.; antenna about 1.3–1.4 mm.

Female: Length about 6.5 mm.; wing 8 mm.

Rostrum stout, black; mouthparts, including palpi, black. Antennae black; scape elongate; basal flagellar segments subglobular, the outer ones passing into short-oval; segments longer than the reduced verticils, with indications of very short pale apical necks. Head brownish black; anterior vertex about as broad as the diameter of scape.

Prothorax brownish black. Mesonotum almost uniformly brownish black, the lateral praescutal borders narrowly brown, posterior sclerites more brownish black; vestiture of notum very reduced, on the praescutal interspaces short and sparse. Pleura brownish black, pteropleurite and pleurotergite slightly paler. Halteres with base of stem and the knob yellowed, remainder of stem dark brown. Legs with coxae brownish black; trochanters dark brown; remainder of legs brownish black to black, femoral bases vaguely paler, somewhat dilated; claws with about three long slender teeth. Wings strongly darkened, restrictedly patterned with still darker brown, most evident at stigma, origin of *Rs*, a costal area over Sc_2 , cord and in the axillary angle. Sparse scattered macrotrichia on longitudinal veins beyond general level of

³ Santos Abreu, D. Elias. Monografía de los Limonidos de las Islas Canarias. Mem. Real Acad. Cien. Artes Barcelona (3) 18: 1–132, 25 figs., 4 col. plates; 1923.

origin of R_s ; a few trichia at tips of Anal veins, especially 2nd A . Venation: Sc_1 ending opposite origin of R_s , Sc_2 greatly retracted to near midlength of the vein, Sc_1 alone longer than R_s ; cell 1st M_2 longer than any veins beyond it; $m-cu$ at or before fork of M ; cell 2nd A broad.

Abdomen, including hypopygium, dark brown. Ovipositor with cerci elongate, slender, nearly straight. Male hypopygium with the tergite transverse, posterior border very gently emarginate, borders thickened, including also a narrower central strip. Basistyle with ventromesal lobe stout, with unusually long setae. Dorsal dististyle nearly straight, tip acute. Ventral dististyle broad on basal half, the outer lobe strongly narrowed, tip obtuse, basal setae larger; rostral prolongation obtuse, the two blackened spines placed on outer margin, slightly separated, their tips extended into hairlike points. Gonapophysis with mesal-apical lobe unusually long, slender, nearly straight, tip obtuse. Aedeagus stout, apex narrowed, bilobed.

Habitat: Isla San Ambrosio, Chile.

Holotype: ♂, in shore caves, 9 Nov. 1960 (Guillermo Kuschel).

Allotopotype: ♀, pinned with the type. *Paratopotypes*: 18 ♂♀, in shore caves and at light, 7-9 Nov. 1960 (Kuschel).

Limonia (Idioglochina) ambrosiana belongs to the less specialized group of the subgenus, with the antennal flagellum only slightly modified from the normal *Limonia* type. The most similar regional species is *L. (I.) porteri* (Alexander) of the Chilean mainland at Antofagasta. This is a pale brown fly with the legs light brown, differing in other details including the terminal position of vein Sc_2 . The male sex of *porteri* still is unknown. The remaining more than twenty known species of the subgenus are quite distinct. All known species of *Idioglochina* are marine in their early stages, being restricted to lands in the Pacific and Indian oceans. The only other New World species is the Nearctic *L. (I.) marmorata* (Osten Sacken) of Pacific coastal United States and Canada.

PUBLICATIONS RECEIVED

Guide to the Insects of Connecticut. Part VI. The Diptera or True Flies of Connecticut. Seventh Fascicle: Psychodidae, by L. W. Quate. Conn. State Geol. and Nat. Hist. Surv. Bul. 92: 1-54, 7 pls.